

Claim Amendments

Please amend claim 1 as follows.

- 1        1. (currently amended) A stereoscopic microscope that enables a plurality of observers, including  
2        a first observer and a second observer to simultaneously observe substantially the same  
3        microscope image of an object, the stereoscopic microscope comprising:  
4                a first observation device for use by the first observer;  
5                a second observation device for use by the second observer;  
6                a stereoscopic microscope body that includes an objective optical system, a pair of zoom  
7        optical systems, a first reflective surface that deflects light paths from the objective optical  
8        system to a substantially horizontal direction, a second reflective surface that then deflects the  
9        light paths upward, and a third reflective surface that then deflects the light paths to a  
10      substantially horizontal direction, wherein the first through third reflective surfaces form a folded  
11      optical system and the pair of zoom optical systems is arranged within the folded optical system;  
12                a first connector that is positioned on the stereoscopic microscope body in the vicinity  
13        that the optical axis of the objective optical system intersects with the stereoscopic microscope  
14        body, said first connector for attaching the first observation device; and  
15                a second connector that is installed on the stereoscopic microscope body at a position that  
16        is the same level as, or above, the position that the first connector is installed on the stereoscopic  
17        microscopic body; and  
18                a pupil splitter unit for splitting a light flux into two light fluxes is provided near a  
19        location conjugate with the exit pupil of one of the pair of zoom optical systems;  
20        wherein  
21                the first connector is located at a position on the stereoscopic microscope body, in relation  
22        to the optical axis of the objective optical system, that is closer to the objective optical system  
23        than is the position of the second connector, and the first and second connectors are arranged on  
24        opposite sides of the optical axis of the objective optical system as viewed in the direction of the  
25        horizontal optical path of the folded optical system.

1       2. (original) The stereoscopic microscope according to claim 1, wherein the second observation  
2       device is attached to the stereoscopic microscope body at the second connector and has a rotation  
3       axis around which the second observation device can be rotated, and  
4               the angle between said rotation axis and the optical axis of the objective optical system, in  
5       the region from the observed object to the microscope body, is 15 degrees or less.

1       3. (previously presented) The stereoscopic microscope according to claim 2, wherein:  
2               the folded optical system further comprises a first leading optical system for dividing the  
3       two light fluxes that transmit through the pair of zoom optical systems into four light fluxes, said  
4       first leading optical system leading these four light fluxes toward the second connector;  
5               the second observation device has an ocular optical system that includes two eyepiece  
6       lenses;  
7               of said four light fluxes, two light fluxes are led by the ocular optical system to said  
8       eyepiece lenses; and  
9               by rotating the second observation device around the rotation axis, the two light fluxes  
10      that enter the ocular optical system may be switched to the other two of said four light fluxes.

1       4. (previously presented) A stereoscopic microscope that enables a plurality of observers,  
2       including a first observer and a second observer to simultaneously observe substantially the same  
3       microscope image of an object, the stereoscopic microscope comprising:  
4               a first observation device for use by the first observer;  
5               a second observation device for use by the second observer;  
6               a stereoscopic microscope body that includes an objective optical system and a pair of  
7       zoom optical systems;  
8               a first connector that is positioned on the stereoscopic microscope body in the vicinity  
9       that the optical axis of the objective optical system intersects with the stereoscopic microscope  
10      body, said first connector for attaching the first observation device; and  
11         a second connector that is installed on the stereoscopic microscope body at a position that

12 is the same level as, or above, the position that the first connector is installed on the stereoscopic  
13 microscopic body;

14 wherein

15 the first connector is located at a position on the stereoscopic microscope body, in relation  
16 to the optical axis of the objective optical system, that is closer to the objective optical system  
17 than is the position of the second connector;

18 the second observation device is attached to the stereoscopic microscope body at the  
19 second connector and has a rotation axis around which the second observation device can be  
20 rotated;

21 the angle between said rotation axis and the optical axis of the objective optical system, in  
22 the region from the observed object to the microscope body, is 15 degrees or less;

23 the stereoscopic microscope body further comprising a first leading optical system for  
24 dividing the two light fluxes that transmit through the pair of zoom optical systems into four light  
25 fluxes, said first leading optical system leading these four light fluxes toward the second  
26 connector;

27 the second observation device has an ocular optical system that includes two eyepiece  
28 lenses;

29 of said four light fluxes, two light fluxes are led by the ocular optical system to said  
30 eyepiece lenses;

31 by rotating the second observation device around the rotation axis, the two light fluxes  
32 that enter the ocular optical system may be switched to the other two of said four light fluxes; and

33 a pupil splitter unit for splitting a light flux into two light fluxes is provided near a  
34 location conjugate with the exit pupil of one of the pair of zoom optical systems.

1 5. (original) The stereoscopic microscope according to claim 1, wherein:

2 the first connector has a contact surface that contacts the first observation device for  
3 attaching the first observation device to the microscope body, said contact surface having its  
4 surface normal inclined toward the first observer; and

5           the second connector is positioned on the microscope body surface in a horizontal  
6       position from the first connector in a direction away from the first observer.

1       6. (previously presented) The stereoscopic microscope according to claim 2, wherein:  
2           the folded optical system further comprises a second leading optical system that includes  
3       a plurality of reflecting surfaces and which makes four light fluxes from the light flux that  
4       transmits through the objective optical system, the second leading optical system leading these  
5       four light fluxes toward the second connector;  
6           the second observation device has an ocular optical system that includes two eyepiece  
7       lenses;  
8           of the four light fluxes, two light fluxes are led by the ocular optical system to the  
9       eyepiece lenses; and  
10          by rotating the second observation device around the rotation axis, the two light fluxes  
11       that enter the ocular optical system may be switched to the other two of the four light fluxes;  
12          wherein  
13          each of the four light fluxes is reflected an even number of times by the plurality of  
14       reflecting surfaces.

1       7. (previously presented) The stereoscopic microscope according to claim 2, wherein:  
2           the folded optical system further comprises a first leading optical system for dividing the  
3       two light fluxes that transmit through the pair of zoom optical systems into four light fluxes, the  
4       first leading optical system leading these four light fluxes toward the second connector;  
5           the second observation device includes a rotatable part having a rotation axis, the angle  
6       between the rotation axis and the optical axis of the objective optical system in a region between  
7       the observed object and the microscope body is in a range of 35 degrees up to and including 55  
8       degrees;  
9           the second observation device further comprises an ocular optical system that includes  
10       two eyepiece lenses and a third leading optical system which leads the four light fluxes just

11 before the rotatable part; and  
12           the second observation device is so constructed that two of the four light fluxes enter  
13 within the rotatable part and the light fluxes that enter within the rotatable part are selected by  
14 rotation of the rotatable part around the rotation axis.

1 8. (original) A stereoscopic microscope according to claim 7, wherein :  
2           the third leading optical system includes a plurality of reflecting surfaces, and each of the  
3 four light fluxes is reflected an even number of times by the plurality of reflecting surfaces.

1 9. (original) The stereoscopic microscope according to claim 3, wherein:  
2           the ocular optical system includes a pair of relay optical systems, a single image rotator, a  
3 pair of image formation optical systems, and a pair of eyepiece optical systems which include  
4 said eyepiece lenses;  
5           the second observation device includes an intermediate tube which houses the pair of  
6 relay optical systems and the single image rotator, and an ocular tube that houses the pair of  
7 image formation optical systems and the pair of eyepiece optical systems;  
8           the intermediate tube is connected to the second connector at one end and is rotatably  
9 connected to the ocular tube at the other end;  
10          two light fluxes that pass through the pair of relay optical systems housed by the  
11 intermediate tube transmit through the image rotator; and  
12          the image rotator is made to rotate by one-half the amount of rotation of the ocular tube.

1 10. (previously presented) A stereoscopic microscope that enables a plurality of observers,  
2 including a first observer and a second observer to simultaneously observe substantially the same  
3 microscope image of an object, the stereoscopic microscope comprising:  
4           a first observation device for use by the first observer;  
5           a second observation device for use by the second observer;  
6           a stereoscopic microscope body that includes an objective optical system and a pair of

7       zoom optical systems;

8           a first connector that is positioned on the stereoscopic microscope body in the vicinity  
9       that the optical axis of the objective optical system intersects with the stereoscopic microscope  
10      body, said first connector for attaching the first observation device; and

11           a second connector that is installed on the stereoscopic microscope body at a position that  
12       is the same level as, or above, the position that the first connector is installed on the stereoscopic  
13      microscopic body;

14       wherein

15           the first connector is located at a position on the stereoscopic microscope body, in relation  
16       to the optical axis of the objective optical system, that is closer to the objective optical system  
17       than is the position of the second connector;

18           the second observation device is attached to the stereoscopic microscope body at the  
19       second connector and has a rotation axis around which the second observation device can be  
20       rotated;

21           the angle between said rotation axis and the optical axis of the objective optical system, in  
22       the region from the observed object to the microscope body, is 15 degrees or less;

23           the stereoscopic microscope body further comprising a first leading optical system for  
24       dividing the two light fluxes that transmit through the pair of zoom optical systems into four light  
25       fluxes, said first leading optical system leading these four light fluxes toward the second  
26       connector;

27           the second observation device has an ocular optical system that includes two eyepiece  
28       lenses;

29           of said four light fluxes, two light fluxes are led by the ocular optical system to said  
30       eyepiece lenses;

31           by rotating the second observation device around the rotation axis, the two light fluxes  
32       that enter the ocular optical system may be switched to the other two of said four light fluxes;

33           the ocular optical system includes a pair of relay optical systems, a single image rotator, a  
34       pair of image formation optical systems, and a pair of eyepiece optical systems including said

35 eyepiece lenses;

36 the second observation device includes an intermediate tube which houses the pair of  
37 relay optical systems having exit optical axes that are substantially parallel and the single image  
38 rotator, and an ocular tube which houses the pair of image formation optical systems and the pair  
39 of eyepiece optical systems, with the intermediate tube being connected to the second connector  
40 at one end;

41 the ocular tube is extendable from, and collapsible into, the intermediate tube over a  
42 range of movement in a direction of the exit optical axes of the pair of relay optical systems; and

43 exit pupils of the pair of relay optical systems are arranged near a middle position of the  
44 range of extending and collapsing movement of the ocular tube.

11. (canceled)

1 12. (original) An observation device that is used by attaching it to the body of a stereoscopic  
2 microscope, said observation device comprising:

3 an intermediate tube that houses a pair of relay optical systems, each relay optical system  
4 having an exit axis that is substantially parallel to the exit axis of the other relay optical system,  
5 and an image rotator; and

6 an ocular tube that houses a pair of image formation optical systems and a pair of  
7 eyepiece optical systems;

8 wherein

9 the intermediate optical tube has a connecting portion that may be connected to the  
10 microscope body at one end;

11 the ocular tube is extendable from, and collapsible into, the intermediate tube over a  
12 range of movement in the direction of the exit optical axes of the pair of relay optical systems;  
13 and

14 exit pupils of the pair of relay optical systems are arranged near a middle position of said  
15 range of movement of the ocular tube.

13. (canceled)

14. (canceled)